REMARKS

Claims 1 and 6 have been amended.

The Examiner has rejected applicant's claims 1, 2 and 5-8 under 35 USC 103(a) as being unpatentable over the TeWinkle (U.S. Pat. No. 7,164,506) patent in view of the Saito, et al. (U.S. Pat. No. 7,042,491) patent. Claims 3, 4, 9 and 10 have been rejected under 35 USC 103(a) as being unpatentable over the TeWinkle patent in view of Saito, et al. patent and further in view of the Okisu, et al. (U.S. Pat. No. 6,571,022) patent. Applicant has amended applicant's independent claims 1 and 6, and with respect to these claims, as amended, and their respective dependent claims, the Examiner's rejection is respectfully traversed.

Applicant's independent claim 1 has been amended to recite an image sensing apparatus comprising: an image sensing element manufactured by a plurality of divisional exposure operations such that the image sensing element includes a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by the plurality of divisional exposure operations, wherein pixel signals obtained by the first light receiving area and the second light receiving area are read out from the image sensing element via a same channel; a correction device which corrects a pixel signal output from said image sensing element; and a control device which controls said correction device to multiply a correction value to pixel signals read out from the first light receiving area and the second light receiving area via the same channel and to write the pixel signals to which the correction value is multiplied to a memory as pixel data of a captured image, wherein an image signal of one frame is formed from image signal which is output from a plurality of light receiving areas including the first light receiving area and the second light receiving area, and wherein the correction device corrects the pixel signal

output from the image sensing element so that a difference between the pixel signals read out from the first light receiving area and the second light receiving area is canceled. Applicant's independent claim 6 has been similarly amended.

The constructions recited in applicant's amended independent claims 1 and 6 are not taught or suggested by the cited art of record. In particular, the cited TeWinkle and Saito, et al. patents fail to teach or suggest an image sensing apparatus in which the image sensing element is manufactured by a plurality of divisional exposure operations such that the image sensing element includes a first light receiving area and a second light receiving area which are formed on an image pickup surface of a semiconductor substrate by the plurality of divisional exposure operations, wherein an image signal of one frame is formed from image signal which is output from a plurality of light receiving areas including the first light receiving area and the second light receiving area. In particular, the TeWinkle patent discloses an image sensor bar 10 which includes a plurality of image sensor array chips 12 mounted on a substrate and butted end-to-end so that the arrays of photosensors on each chip form a single linear array of photosensors. See, Col. 2, line 64-Col. 3, line 2; FIG. 1. Each chip 12 in TeWinkle includes at least one row 20 of photosensors arranged in a linear array, and each photosensor in the linear array is connected to a transfer circuit 22 controlled by a shift register 24. Col. 3, lines 30-46; FIG. 2. TeWinkle teaches that each chip also includes an "output enable" (OE) connection, which connects to the shift register and causes the shift register to sequentially output the image related charges to a "video out" (VO) connection. See, FIG. 1 and 2; Col. 3, lines 4-17 and 54-58. TeWinkle further teaches that the video data can be output from a set or subset of chips 12 in a single serial stream onto a common output line, wherein the shift register lines of the chips are connected and a short pulse is moved along the shift registers so as to cause the

photosensors of the chips to serially output the video data, moving from one chip to another. See, FIG. 7; See, Col. 4, line 62-Col. 5, line 47.

Thus, TeWinkle discloses an image sensor bar that includes a plurality of chips connected with one another, and in which each chip individually outputs image related charges captured by the photosensors through a VO line via a shift register. TeWinkle also discloses that the outputs from the chips can be serially read out by connecting the shift registers of the chips and by moving the OE pulse sequentially from one chip to another. However, there is no teaching in TeWinkle of reading out pixel signals from two different light receiving areas, i.e. different chips, of the image sensor bar via a same channel. Instead, in TeWinkle, the pixel signals are read out from each light receiving area via a separate channel, i.e. VO line, and the shift registers are controlled so that the pixel signals from the channels associated with the light receiving areas are read out in series to output an image signal into a common output line. Accordingly, the structure of the image sensor bar in TeWinkle is different from the structure of the image sensing element of applicant's independent claims 1 and 5, in which an image signal of the first light receiving area and an image signal of the second light receiving area are read out via the same channel. In addition, there is no mention in TeWinkle of an image signal of one frame being formed from image signal which is output from the plurality of light receiving areas, including the first light receiving area and the second light receiving area.

These features are also not taught or suggested by the Saito, et al. patent. In particular, Saito, et al. discloses an image signal output device that determines a distance to the subject for use in a focusing operation, and which includes a pair of photoelectric converter line sensor portions 11a, 11b, gate portions 12a, 12b corresponding to the line sensor portions 11a, 11b, respectively, that control accumulation of electric charges in the

line sensor portions 11a, 11b. See, FIG. 1; Col. 4, lines 6-28. The device of Saito, et al. also includes CCD shift registers 13a, 13b corresponding to the gate portions 12a, 12b, respectively, receiving electric charges accumulated in the line sensor portions 11a, 11b via the gate portions and serially outputting the accumulated electric charges from a terminal A. See, FIG. 1; Col. 4, lines 29-45; Col. 8, lines 34-46. Saito, et al. teaches that the pixel outputs (accumulated electric charges) output from each line sensor portion 11a, 11b is serially output from the corresponding CCD register 13a, 13b and each pixel output is then converted into a digital value by the A/D converter (ADC) portion 22, which switches the conversion range based on the output difference (sensitivity difference) between the line sensor portions in order to correct the sensitivity difference between the line sensor portions. See, Col. 8, line 43-Col. 9, line 13. In Saito, et al., the digital values output from the ADC corresponding to the pixel outputs from the line sensor portions are then used in determining a measurement value, which corresponds to the distance to the subject and based on which a focusing operation is performed. See, Col. 9, lines 14-32.

Thus, in Saito, et al. each line sensor portion 11a, 11b outputs a pixel output via a corresponding gate portion 12a, 12b and to a corresponding CCD shift register 13a, 13b. The line sensor portions of Saito, et al. appear to be two separate image sensing elements each of which separately outputs the pixel signals via a corresponding gate portion and CCD shift register. There is no mention anywhere in Saito, et al. of the line sensor portions being part of the same image sensing element and formed on an image pickup surface of a semiconductor substrate by a plurality of divisional exposure operations, or of the outputs from the line sensor portions being read out via the same channel.

In addition, in Saito, et al., the pixel outputs from the line sensor portions 11a, 11b are converted by the ADC with different conversion ranges to compensate for sensitivity

difference between the line sensor portions so as to be used in determining the distance to the subject and in a focusing operation. Saito, et al. makes no mention of forming an image signal of one frame from image signal output from the light receiving areas, i.e. line sensor portions, including the first and second light receiving areas. Instead, the image signals from the light receiving areas, i.e. line sensor portions, in Saito, et al. are only used in the focusing operation.

Accordingly, applicant's amended independent claims 1 and 6, each of which recites an image sensing element manufactured by a plurality of divisional exposure operations such that the image sensing element includes a first light receiving area and a second receiving area which are formed on an image pickup surface of a semiconductor substrate by a plurality of divisional exposure operations, wherein pixel signals obtained by the first light receiving area and the second light receiving area are read out from the image sensing element via a same channel, and wherein an image signal of one frame is formed from an image signal which is output from a plurality of light receiving areas including the first light receiving area and the second light receiving area, and their respective dependent claims, patentably distinguish over the TeWinkle patent and the Saito, et al. patent, taken alone or in combination with one another.

In view of the above, it is submitted that applicant's claims are patentably distinguished over the cited references. Accordingly, reconsideration of the claims is respectfully requested.

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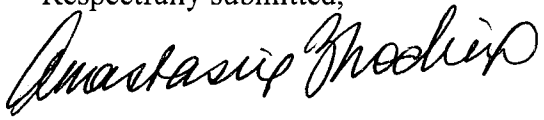
Respectfully submitted,



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